Amendments to the Specification:

Please replace the paragraph starting on line 21, page 20 and ending on line 9, page 21 with the following amended paragraph:

Consequently, the RDT system 740 represents an additional radio resource for a spread spectrum wireless network with physical constraints that may be different from the BS sectors themselves. For instance, the available data rates over the communication trunk line between an RDT and a BS can be limited to the equivalent of a T-1 line (~ 1.5 Mbps) and even vary with time if the link is a shared one. According to the embodiments of the present invention, the communication trunk line between an RDT and a BS may be implemented by a landline (i.e., wired) connection, such as via an Internet Protocol (IP) network, an optical data link, or a designated frequency band, such as an out-of-band RF, for wireless connection. FIG. 13 shows the use of an IP network ~~1370~~ 1330 as the communication link or trunk line between an RDT 1320 and its BS 1310, in accordance to one embodiment of the present invention. The forward link manager or FLM is located at the BS 1310. The RDT 1320 and the BS 1310 are connected to the IP network ~~1370~~ 1330 via IP routers 1370, which may be used to implement the routing functions of Router 720 shown in FIG. 7, as understood by one skilled in the art. The IP network ~~1370~~ 1330 can be a dedicated private data network for the communication trunk line, or it can be a public data network such as the Internet.

Please replace the paragraph starting on line 17, page 22 and ending on line 2, page 23 with the following amended paragraph:

The FLM 710 then uses the above inputs to make a series of decisions. FIG. 11 shows a first tier of the decision structure implemented in the FLM 700 for determining whether any incoming UE service requests should be serviced by a particular RDT in a wireless network cell, in accordance to an embodiment of the present invention. ***P*** is the total radiated power at the

RDT, ***D*** is the total data rate carried by the trunk line between the RDT and the BS, ***F*** is a measure of the processor load at the RDT, and ***Health Flag*** is set whenever an RDT diagnostic routine fails. The first tier of processing is continuous and asynchronous to any UE service requests. In this tier, the FLM 700 continually compares reported RDT resource usage (such as power, data rate, and processor capacity) to user-defined hard limits and forces the Radio Network Layer 780 to defer any additional load for the RDT if and resource exceeds the hard limits. In other words, as shown by conditions ~~110~~ 1110, 1120, 1130 and 1140 in FIG. 11, if the hard limits of ***P***, ***D***, or ***F*** are exceeded or the ***Health Flag*** is set, all subsequent requests for UE support from the RDT are denied.

Please replace the paragraph starting on line 7, page 26 and ending at the end of the same page with the following amended paragraph:

Referring back to FIG. 9, after exiting the coding and interleaving module 900, the data sub-channel and the control sub-channel are separated, with the data sub-channel denoted by line 910, and the control sub-channel by line 920. Each sub-channel is then spreaded by a respective spreading code, $C_{ch,SF,m}$. The spreaded control sub-channel is then phase shifted by 90 degrees, as represented by the multiplication of the control sub-channel by j at the multiplier ~~940~~ 930, to denote a complex number. At the summation 940, the two sub-channels 910 and 920 are combined as a stream of binary complex numbers representing the signal to be transmitted to a UE. The signal is subsequently scrambled by a downlink scrambling code, $S_{dl,n}$, via the multiplier 950. FIG. 14 shows the generator for the baseband in-phase (I) and quadrature (Q) channel scrambling codes in accordance to one embodiment of the present invention. The

appropriate initial state of the shift registers is provided by the BS over the RDT trunk line. The codes are modulo-2 summed with the spread data. Each output bit of the spreader is alternately mapped to the I and Q channels by the appropriate code. The Q-channel scrambling code is then phased shifted by 90 degrees and summed with the I-channel scrambling code to generate the downlink scrambling code, $S_{dl,n}$. The output of the multiplier 950 is ~~them~~ then multiplied by a power control gain G1, an amplitude factor, to generate a floating point amplitude for the downlink data signal to the UE. Summation 960 are then used to total the downlink data signals to the UEs from all dedicated physical channels 1 to N for subsequent conversion to RF signals via the RF circuitry shown to the right of the summation 960 in FIG. 9.

Please replace the paragraph starting on line 14, page 27 and ending at the end of the same page with the following amended paragraph:

According to an embodiment of the present invention, one implementation of the integrated power amplifier/antenna high power RF subsystem 1650 in an RDT system is illustrated in FIG. 18, which shows the conversion of medium power RF signals to the high power W-CDMA RF waveforms for transmission to UEs. The antenna includes a 4-element array of slots, producing vertical polarization. The use of air-filled transmission lines improves efficiency and lowers manufacturing cost. This implementation includes an airline corporate feed structure 1710, integrated power amplifiers 1720, and airline fed slot radiating elements ~~1730~~ 1740 as integral components of a multi-layer board. An airline refers to a waveguide filled with air. A waveguide is constructed of conducting materials. Currents flow in the material generate electromagnetic waves that propagate in the air-filled portion of the waveguide cavity.

Because the cavity is filled with air instead of a material (e.g., plastic) there are almost no energy losses to heating. An airline fed slot radiator refers to an opening in the conducting wall of the waveguide that allows the electromagnetic wave to exit or "escape" and radiate in a controlled manner.